

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in this application.

Claim 1 (Currently amended): A method for forming a compact from a powder, comprising the steps of:

applying a solution obtained by dissolving a lubricant in a solvent to a forming portion of a mold body;

evaporating the solution to form a crystallized layer of the lubricant on a surface of the forming portion;

filling the forming portion of the mold body with a raw powder, said raw ~~powder~~^{powder} being Fe-based metal powder or Cu-based metal powder; and

then fitting upper and lower punches into the forming portion,

wherein said lubricant is at least one member selected from the group consisting of dipotassium hydrogen phosphate, disodium hydrogen phosphate, trisodium phosphate, sodium polyphosphate, riboflavin sodium phosphate, potassium sulfate, sodium sulfite, sodium thiosulfate, sodium dodecylsulfate, sodium dodecylbenzenesulfonate, Food Blue No.1., Food Yellow No. 5., sodium ascorbyl sulfate, sodium tetraborate, sodium silicate, sodium tungstate, sodium acetate, sodium benzoate, sodium ascorbate, sodium stearate, potassium stearate, sodium hydrogen carbonate, sodium carbonate and potassium nitrate, and

wherein said solution has said lubricant completely dissolved in water into a uniform phase in a concentration greater than or equal to a concentration at which a crystallized layer of one molecule of the lubricant is formed, but less than a concentration of a saturated solution.

Claims 2-14 (Canceled).

Claim 15 (Previously presented): The method for forming a compact from a powder set forth in claim 1, wherein an antiseptic substance is added into the lubricant.

Claim 16 (Previously presented): The method for forming a compact from a powder set forth in claim 1, wherein a defoaming agent is added into the lubricant.

Claims 17-19 (Canceled).

Claim 20 (Withdrawn): A mold apparatus for powder molding, comprising:
a mold body with a through-hole for forming a side of a compact;
a lower punch for fitting into the through-hole from beneath;
an upper punch for fitting into the through-hole from above;
a spray pump for spraying a lubricant solution to the through-hole;
a heater provided around a forming portion of the mold body, the forming portion being defined by the through-hole and the lower punch; and
a temperature control system for keeping a temperature of the heater higher than an evaporating temperature of the solution.

Claim 21 (Withdrawn): A mold apparatus for powder molding, comprising:
a mold body with a through-hole for forming a side of a compact;
a lower punch for fitting into the through-hole from beneath;
an upper punch for fitting into the through-hole from above;
a spray pump for spraying a lubricant solution to the through-hole;
a heater provided around a forming portion of the mold body, the forming portion being defined by the through-hole and the lower punch; and
a temperature control system for keeping a temperature of the heater higher than an evaporating temperature of the solution, but lower than a melting temperature of the lubricant.

Claim 22 (New): A method for forming a sintered product from a powder, comprising the steps of:

applying a solution obtained by dissolving a lubricant in a solvent to a forming portion of a mold body;

evaporating the solution to form a crystallized layer of the lubricant on a surface of the forming portion;

filling the forming portion of the mold body with a raw powder, said raw powder being Fe-based metal powder or Cu-based metal powder;

fitting upper and lower punches into the forming portion;

pressing the raw powder to form a compact; and

sintering the compact to form a sintered product;

wherein said lubricant is at least one member selected from the group consisting of dipotassium hydrogen phosphate, disodium hydrogen phosphate, trisodium phosphate, sodium polyphosphate, riboflavin sodium phosphate, potassium sulfate, sodium sulfite, sodium thiosulfate, sodium dodecylsulfate, sodium dodecylbenzenesulfonate, Food Blue No.1., Food Yellow No. 5., sodium ascorbyl sulfate, sodium tetraborate, sodium silicate, sodium tungstate, sodium acetate, sodium benzoate, sodium ascorbate, sodium stearate, potassium stearate, sodium hydrogen carbonate, sodium carbonate and potassium nitrate, and

wherein said solution has said lubricant completely dissolved in water into a uniform phase in a concentration greater than or equal to a concentration at which a crystallized layer of one molecule of the lubricant is formed, but less than a concentration of a saturated solution.

Claim 23 (New): The method for forming a compact from a powder set forth in claim 1, wherein the step of applying a solution is carried out by spraying the solution.